Chapter V: Merced Wild and Scenic River

Introduction

During the 1960s, it was apparent that many American rivers were being dredged, dammed, diverted, and degraded at an alarming rate. In response, Congress established the Wild and Scenic Rivers Act in October 1968. A Wild and Scenic River is a river that possesses one or more Outstandingly Remarkable Values distinguishing it from all other rivers and qualifying it for protection. The goal for designation of a river as Wild and Scenic is to preserve its free- flowing character and its Outstandingly Remarkable Values.

Congress designated the Merced a Wild and Scenic River in 1987 to protect its free- flowing condition and to protect and enhance its Outstandingly Remarkable Values for the benefit and enjoyment of present and future generations (16 USC 1271- 1278). Designation provides the Merced River special protection under the Wild and Scenic Rivers Act and requires that managing agencies prepare a comprehensive management plan for the river and its immediate environment. The Merced Wild and Scenic River designation includes reaches of both the Merced River main stem and the South Fork Merced River within Yosemite National Park.

The National Park Service released the *Merced Wild and Scenic River Comprehensive Management Plan* (referred to as the Merced River Plan in this environmental assessment) in February 2001, which describes how the Merced Wild and Scenic River corridor will be managed. The Merced River Plan applies seven management elements to prescribe desired future conditions, typical visitor activities and experiences, and park facilities and management activities allowed in the river corridor.

This chapter evaluates the consistency of the proposed action with the Wild and Scenic Rivers Act and the management elements of the Merced River Plan, and includes the following sections:

- Overview of the Wild and Scenic Rivers Act
- Overview of the Merced River Plan and its management elements
- Analysis of the consistency of the proposed action with the Merced River Plan management elements

The Wild and Scenic River Act Section 7 Determination is included as Appendix B of this document.

Wild and Scenic Rivers Act

The Wild and Scenic Rivers Act (PL 90- 542, as amended) provides the following statement of policy:

> *It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free- flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of*

> *present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free- flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.*

Under the Wild and Scenic Rivers Act, Outstandingly Remarkable Values are defined as those resources that are river- related and rare, unique, or exemplary in a regional or national context. The Wild and Scenic Rivers Act stipulates that these values are to be protected and enhanced and that each agency administering a segment of the Wild and Scenic Rivers System establish boundaries (an average of not more than 320- acres per mile on both sides of the river) and prepare a comprehensive management plan to provide for the protection of river values. The plan must address protection of resources, development of lands and facilities, user capacities, and other management practices necessary to achieve the purposes of the act, and the *Merced Wild and Scenic River Comprehensive Management Plan* fulfills this requirement.

Section 2 of the Wild and Scenic Rivers Act requires that designated rivers be classified and administered as Wild, Scenic, or recreational river segments, based on the condition of the river corridor at the time of boundary designation. The classification of a river segment indicates the level of development on the shorelines, the level of development in the watershed, and the accessibility by road or trail. Classifications are defined in the act as follows:

- *Wild river areas*: Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shoreline essentially primitive and waters unpolluted.

- *Scenic river areas:* Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

- *Recreational river areas*: Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past.

1987 Designation of the Merced Wild and Scenic River

Approximately 122 miles of the Merced River, including the South Fork Merced River, were placed within the National Wild and Scenic Rivers System (PL 100- 149, 1987 and PL 102- 432, 1992). The National Park Service administers approximately 81 miles of this river system flowing within Yosemite National Park and the El Portal Administrative Site (referred to as the Merced Wild and Scenic River in this environmental assessment). The U.S. Forest Service and the U.S. Bureau of Land Management administer the remaining 41 miles of the designated river. The Merced River Plan provides the policy direction by which the National Park Service will manage the 81 miles of river corridor within its jurisdiction.

Merced Wild and Scenic Rivers Section 7 Determination

Pursuant to the Wild and Scenic Rivers Act, the National Park Service must prepare a Section 7 determination on all proposed water resources projects. The South Fork Merced River Bridge Replacement Project is located within the bed and banks of the South Fork Merced River, and will affect the free- flowing condition of the river. Therefore, the Section 7 determination process has been completed. The Section 7 determination for the South Fork Merced River Bridge Replacement Project appears in Appendix B. The Section 7 determination process applies only to

the proposed action; as a result, the Preferred Alternative is the only alternative analyzed in the Section 7 determination.

Merced River Plan Overview

The purpose of the Merced River Plan is:

> *… to provide direction and guidance on how best to manage visitor use, development of lands and facilities, and resource protection within the river corridor. The National Park Service developed a series of planning goals to guide management decision- making in these areas. The Merced River Plan is a template against which project implementation plans will be judged to determine whether such projects will protect and enhance the values for which the Merced River was designated Wild and Scenic. As a result, the Merced River Plan provides general direction and guidance for future management decisions; it does not address the specific details of future projects.*

Merced Wild and Scenic River Management Elements

The Merced River Plan is programmatic and, therefore, does not specify detailed actions. The plan applies seven management elements to prescribe desired future conditions, typical visitor activities and experiences, and park facilities and management activities allowed in the river corridor. The management elements include: (1) boundaries, (2) classifications, (3) Outstandingly Remarkable Values, (4) the Wild and Scenic Rivers Act Section 7 determination process, (5) the River Protection Overlay, (6) management zones, and (7) the VERP framework. Each management element has been evaluated relative to the South Fork Bridge area and described in the Section 7 Determination attached as Appendix B. Please refer to the Merced River Plan for additional information. The entire Merced River Plan (NPS 2001a) can be viewed online at www.nps.gov/yose/planning.htm .

Analysis of Consistency with the Merced River Plan

This environmental assessment is based on the management elements prepared for the Merced River Plan. The South Fork Merced River Wild and Scenic River segment in which the South Fork Merced River Bridge Replacement Project would be implemented is Segment 7, Wawona area. For the purposes of this analysis of potential effects on Outstandingly Remarkable Values, the Preferred Alternative is compared to the No Action Alternative. The focus of the analysis is on long- term effects (e.g., effects that would last 10 years or more or would be permanent). Short-term effects are not addressed in this analysis unless they are of sufficient magnitude (having a substantial, highly noticeable influence) to warrant consideration.

The Preferred Alternative has been assessed with regard to (1) compatibility with boundaries; (2) compatibility with classifications; (3) protection and enhancement of Outstandingly Remarkable Values; (4) compatibility with the Wild and Scenic Rivers Act Section 7 determination process (Appendix B); (5) consistency with the River Protection Overlay; (6) consistency with management zoning; and (7) consistency with VERP. This Wild and Scenic Rivers Act analysis is required because the proposed project is within the Wild and Scenic River boundaries.

Protection and Enhancement of Outstandingly Remarkable Values

Pursuant to Section 10(a) of the Wild and Scenic Rivers Act, river managing agencies must protect and enhance Outstandingly Remarkable Values within the Wild and Scenic River corridor boundary. Uses that are consistent with this provision and that do not substantially interfere with public enjoyment and use of these values should not be limited (16 USC 1281[a]). Outstandingly Remarkable Values located outside the Wild and Scenic River corridor boundary must also be protected (NPS 2001).

Analysis of Outstandingly Remarkable Values is focused on segment- wide effects, not site-specific effects. Exceptions to the segment- wide guideline include site- specific activities that could have substantial effects, such as degradation of habitat of a river- related special- status species (a biological Outstandingly Remarkable Value) that is endemic to that location (e.g., Wawona riffle beetle).

To evaluate potential effects to Outstandingly Remarkable Values, actions that could degrade them on a segment- wide basis include those with effects discernable throughout the majority of the river segment, or effects that would be of sufficient magnitude to affect adjacent segments. For the purposes of this analysis, the following assumptions for each Outstandingly Remarkable Value of the Wawona area segment were made:

- *Scenic* – The analysis considers the specific features that are listed in the scenic Outstandingly Remarkable Value for the Wawona area segment, and potential effects to views are analyzed from the perspective of a person situated on the bridge, riverbank, or river.

- *Recreation* – The analysis considers effects to the opportunity to experience a spectrum of river- related recreational activities.

- *Biological* – The analysis focuses on effects to riparian areas and adjacent uplands, wetlands, low- elevation meadows, and other riverine areas that provide rich habitat for a diversity of river- related species.

  Cultural – The analysis considers effects to river- related cultural resources that are not intended to divert the free flow of the river and that are either eligible for or listed on the National Register of Historic Places, including archeological sites, which provide evidence of thousands of years of human occupation, and continuing traditional use. The analysis also considers effects on nationally significant historic resources, such as designated landscapes and developed areas, historic buildings, and circulation systems (trails, roads, and bridges) that provide visitor access to the sublime views of natural features that are culturally valuable.

- *Scientific* – The analysis considers the proposed action effects on the integrity of the South Fork Merced River, in context with the Merced Wild and Scenic River, as a scientific resource.

- *Geologic Processes/Conditions* – Wawona Segment 7 does not have a Geologic Processes/Conditions Outstandingly Remarkable Value.

- *Hydrologic Processes* – Wawona River Segment 7 does not have a Hydrologic Process Outstandingly Remarkable Value.

It is possible for Outstandingly Remarkable Values to be in conflict, or for an action to have beneficial impacts with regard to one Outstandingly Remarkable Value and adverse impacts with regard to another. The Merced River Plan recognizes this possibility, as follows:

> *Actions must protect all Outstandingly Remarkable Values, regardless of where they are located. When Outstandingly Remarkable Values lie within the boundary of the Wild and Scenic River, the value must be protected and enhanced. When values are in conflict with one another, the net effect to Outstandingly Remarkable Values must be beneficial.*

The Wild and Scenic Rivers Act stipulates that agencies are given discretion to manage a river system with "varying degrees of intensity for its protection and development, based on the special attributes of the area."

Under the Preferred Alternative the South Fork Bridge would be removed and a longer, single-span structure constructed in its place. Bridge removal and replacement would remove piers that act as impediments to flow and avoid future catastrophic collapse of the bridge and the associated localized adverse effects on scenic, recreation, biological, cultural, and scientific Outstandingly Remarkable Values (see table V- 1). Overall, the proposed action would have localized beneficial effects on the scenic, recreation, and biological Outstandingly Remarkable Values. Removal and replacement of the South Fork Bridge could have localized adverse effects on cultural resources, if they are present in a currently undisturbed and unevaluated portion of the riverbank. The effects of the Preferred Alternative on Outstandingly Remarkable Values are summarized below in table V- 1. Generally, the effects of the proposed action would be localized, and limited to the immediate South Fork Bridge project area, thus having no effect on the scenic, recreation, biological, cultural, and scientific processes Outstandingly Remarkable Values on a segment- wide level.

Compatibility with Boundaries

Areas to be managed under the Merced River Plan are defined by boundaries. The act allows for river corridor boundaries that average no more than 320- acres of land per river mile, measured from the ordinary high- water mark on both sides of the river. Boundaries, however, do not limit the protection of Outstandingly Remarkable Values, which must be protected regardless of whether they are inside or outside the corridor boundaries.

In the vicinity of Wawona, including the South Fork Bridge site, the Wild and Scenic River boundary lies 0.25 mile from ordinary high water of the South Fork Merced River, as defined by the U.S. Army Corps of Engineers in 33 CFR Section 328.3. Ordinary high water represents the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area. The South Fork Merced River Bridge Replacement Project is located within the boundaries of Segment 7, Wawona area, which is classified as recreational. The Preferred Alternative is compatible with boundaries, as the project area lies within a recreational river area, which allows access by road and some shoreline development.

Table V-1. Impacts of the Preferred Alternative on Outstandingly Remarkable Values of the South Fork Merced River

Outstandingly Remarkable Value	Effects of the Preferred Alternative
Scenic — This segment provides views from the river and its banks (of Wawona Dome).	The Preferred Alternative would provide a sidewalk on the upstream side of the bridge from which river views would be possible. The views of most interest from the South Fork Bridge would include the river, banks, and riparian vegetation; the historic Covered Bridge; Wawona Dome; forested slopes; the Wawona Golf Course; and the Wawona Store. The Preferred Alternative would protect the scenic Outstandingly Remarkable Value on a localized level by providing a sidewalk that allows viewing opportunities. The Preferred Alternative would have no effect on the scenic Outstandingly Remarkable Value on a segment-wide level.
Recreation — This segment offers opportunities to experience a spectrum of river-related recreational activities, from nature study and photography to hiking.	The Preferred Alternative would provide wider shoulders and a sidewalk on the upstream side of the new bridge, which would allow opportunities to experience a spectrum of river-related recreational activities. These activities include sightseeing, photography, and nature study over the long term. Sidewalk construction would negligibly enhance the recreation Outstandingly Remarkable Value on a localized level, because the effects would be limited to the immediate vicinity of the South Fork Bridge and there would be no effect on the spectrum of river-related recreational activities throughout the remainder of the South Fork Merced River corridor. Although the Preferred Alternative would have localized beneficial effects, on a segment-wide level the Preferred Alternative would have no effect on the recreation Outstandingly Remarkable Value.
Biological — This segment contains a diversity of river-related species, wetlands, and riparian habitats. There are federal and state special-status species in this segment, including Wawona riffle beetle.	The Preferred Alternative would involve regrading and revegetation of the riverbanks in the immediate vicinity of the South Fork Bridge and the temporary bridge structures, which would have site-specific, long-term, beneficial effects on the bank and vegetation integrity. The Preferred Alternative would also improve riparian, wetland, and aquatic habitat for a diversity of river-related species, including special-status species. Under the No Action Alternative the South Fork Bridge would collapse over time and potentially result in damming, flooding, bank erosion, and release of bridge debris downstream, which could temporarily affect riparian and aquatic resources and river-related special-status species. The Preferred Alternative would avoid these impacts to biological resources. The effects of the Preferred Alternative would be limited to the South Fork Bridge area near Wawona, and would have no effects to river-related biological resources throughout the remainder of the South Fork Merced River corridor. The Preferred Alternative would locally enhance this Outstandingly Remarkable Value; however, on a segment-wide level the Preferred Alternative would have no effect on the biological Outstandingly Remarkable Value.
Cultural — This segment contains evidence of thousands of years of human occupation, including numerous prehistoric and historic Indian villages, historic sites, structures, and landscape features related to tourism, early Army and National Park Service administration, and homesteading.	There is a low probability that removal of the South Fork Bridge and replacement with a 16-foot longer structure could have an adverse impact to archeological resources due to ground-disturbing activities. The adverse effects would be limited to the immediate vicinity of the South Fork Bridge, and would have no effect on archeological resources throughout the park. Although the Preferred Alternative would have a localized adverse effect, on a segment-wide level the Preferred Alternative would have no effect on this aspect cultural Outstandingly Remarkable Value. Ethnographic resources, including traditional use areas, would not be affected on a segment-wide basis under the Preferred Alternative.
Scientific — The entire river corridor constitutes a highly significant scientific resource because the river watershed is largely within designated Wilderness in Yosemite National Park. Scientific Outstandingly Remarkable Values relate to the Merced River value for research. This outstandingly Remarkable Value applies to all the Merced River and South Fork segments.	The Preferred Alternative would remove the condemned South Fork Bridge and the temporary Bailey bridge. South Fork Bridge demolition would be conducted in a controlled manner to avoid collapse, would incorporate a containment system to capture debris, and would result in removing two piers from the riverbed. Pier removal would result in a more natural flow regime, establishment of additional habitat to support the Wawona riffle beetle, and restoration of riverbank vegetation following construction. The Preferred Alternative would have a beneficial localized effect to the protection of the scientific Outstandingly Remarkable Value; however, there would be no effect on the scientific Outstandingly Remarkable Value on a segment-wide basis.

Compatibility with Classifications

One of three classifications (Wild, Scenic, or Recreational) was applied to each segment of the river corridor and was based on the existing condition of the river at the time of designation. The classification of a river segment indicates the level of development on the shorelines, the level of development in the watershed, and the degree of accessibility by road or trail.

The Wawona area reach or segment in which the South Fork Bridge is located (Segment 7) has been classified as Recreational due to accessibility and the higher level of development in the Wawona Area. The Preferred Alternative will remove a condemned and flow- impeding bridge and an unsightly temporary bridge from the banks and bed of the South Fork Merced River and replace both with a single- span structure. Replacement of the condemned bridge is compatible with the Recreational classification.

Compatibility with the Wild and Scenic Rivers Act Section 7 Determination Process

The assessment of the Preferred Alternative with regard to compatibility with the Wild and Scenic Rivers Act Section 7 determination process is addressed in Appendix B of this document.

Consistency with the River Protection Overlay

The South Fork Bridge is an essential facility for River Protection Overlay purposes because the bridge is a component of the primary access road into the park from the south, Highway 41. The condemned and closed South Fork Bridge would be removed and replaced with a new single-span bridge under the Preferred Alternative, which would improve free- flowing conditions in this area. Since one of the purposes of the River Protection Overlay is to protect and restore hydrologic processes within the river corridor, the Preferred Alternative would be consistent with the River Protection Overlay. Because the South Fork Bridge is considered an essential facility, a project design has been proposed to minimize impacts to the free- flowing condition of the river and minimize disruption of contribution of woody debris to the river, i.e., the removal of piers within the river channel and bridge. The proposed project incorporates mitigation measures to avoid or reduce impacts. In addition, the temporary Bailey bridge installed to carry traffic in the interim and during construction would be removed. The Preferred Alternative is, therefore, consistent with the River Protection Overlay.

Following removal of the condemned bridge, two piers would no longer impede flow and the abutments would be laid back to stabilize and protect the riverbanks in a more natural manner. Riparian vegetation would be planted to stabilize the bank in the areas up- and downstream of the new bridge abutments and at the temporary bridge site. The National Park Service would monitor this area of the South Fork River to ensure that bank loss does not occur post-construction. Should river processes erode the bank at these sites, the National Park Service would use boulders and other naturally occurring river materials to stabilize the bank.

Consistency with Management Zoning

Management zoning is a technique used by the National Park Service to classify areas and prescribe future desired resource conditions, visitor activities, and facilities. Similar to zoning

common to other types of land- use planning, i.e., municipal zoning, management zoning prescribes future desired conditions for a particular area. A management zone is defined as:

> *A geographical area for which management directions or prescriptions have been developed to determine what can and cannot occur in terms of resource management, visitor use, access, facilities or development, and park operations. Each zone has a unique combination of resource and social conditions, and a consistent management prescription. Different actions will be taken by the National Park Service in different zones with regard to the type and levels of use and facilities (NPS 1997c).*

Management zoning seeks to protect and enhance the Outstandingly Remarkable Values within each segment of the river. Specifically, the Merced River Plan places an emphasis on integrating protection and enhancement of natural and cultural resource Outstandingly Remarkable Values with the protection and enhancement of the diverse recreation Outstandingly Remarkable Values within the river corridor. Management zoning prescribes certain uses and facilities that are not allowed in an area. Before such zoning existed, additional development and higher intensity uses by park visitors could have resulted in impacts to Outstandingly Remarkable Values over the long term. Management zoning also provides opportunities for restoration of Outstandingly Remarkable Values in areas where lower use and facility levels are prescribed. The South Fork Bridge is in management zone 2B, Discovery.

Management zone 2B (Discovery) allows for low to moderate visitor use levels in a somewhat accessible setting where the visitor experience is largely self- directed. The Discovery zone is intended to accommodate vehicle roads and improved trails (can be realigned or relocated where they do not adversely affect Outstandingly Remarkable Values); small turnouts for parking, scenic viewing, or shuttle bus stops; trails for hiking and through- trails for bicycling; minimal restroom facilities; fences, boardwalks, platforms, and other features to direct travel around sensitive resources; interpretive, directional, and safety signs; bridges where necessary for access, improved circulation, safety, and/or resource protection; utilities such as well sites, utility lines, pump stations, and other facilities (where screened from view); and minimal utility crossings of the river, only where necessary to support park operations. Resource protection activities in this zone include restoring natural processes, restoring natural flood cycles and river channel dynamics, and use of fire management practices to enhance biological and hydrologic Outstandingly Remarkable Values. This zone also encourages the protection and enhancement of cultural resource Outstandingly Remarkable Values, including archeological sites, by limiting development and access.

Removal of the condemned, flow- impeding bridge and the unsightly temporary bridge would be consistent with the resource protection activities permissible in the Discovery zone. The proposed bridge demolition activities, including the incorporation of Best Management Practices, would be consistent with the types of activities permissible within management zone 2B. Construction of the new bridge would be compatible with management zone 2B because management zone 2B allows for bridges that improve park access, circulation, and visitor safety in addition to numerous other benefits. The proposed action is consistent with this management element of the Merced River Plan.

Consistency with Visitor Experience and Resource Protection

The VERP framework is a tool developed by the National Park Service to address user capacities and was adopted by the Merced River Plan to meet the requirements of the Wild and Scenic Rivers Act. The VERP framework provides protection for both park resources and visitor

experience from impacts associated with visitor use, and assists managers in addressing visitor use issues. The VERP framework is an ongoing, iterative process of determining desired conditions (including desired cultural resource conditions, desired natural resource conditions, and desired visitor experiences); selecting and monitoring indicators and standards that reflect these desired conditions; and taking management action when the desired conditions are not being realized.

Yosemite National Park began development of the parkwide VERP framework in 1998 and continues to develop desired conditions, indicators, standards, and monitoring protocols. The VERP framework outlined for the *Merced Wild and Scenic River Comprehensive Management Plan* will be implemented during 2005. In the interim, the park will implement existing management activities and direction contained in the Merced River Plan (e.g., Wild and Scenic Rivers Act Section 7 determination, River Protection Overlay, management zoning prescriptions) to address user capacity, protection, and enhancement of Outstandingly Remarkable Values, and management of park resource monitoring to ensure that conditions do not deteriorate. Appropriate management actions, consistent with existing management activities, will be implemented to prevent further degradation of resources. The Preferred Alternative is consistent with VERP, as it is in compliance with the Merced River Plan.

Conclusion

The Preferred Alternative would remove two human- made structures from the bed and banks of the South Fork Merced River, i.e., the South Fork Bridge and a temporary Bailey bridge, and replace them with a single- span bridge structure in the same location. The new bridge would span the entire South Fork Merced River without the need for center support piers, thus restoring a more natural flow through this river reach. Replacement of the South Fork Bridge is necessary because the bridge serves as a primary access road into the park for over one- third of park visitors. Removal of the two existing bridge structures, particularly the two in- stream piers and river- narrowing abutments will restore the South Fork Merced River to more natural free-flowing conditions.

Assessment of the Preferred Alternative with respect to (1) compatibility with boundaries; (2) compatibilities with clarifications; (3) protection and enhancement of Outstandingly Remarkable Values; (4) compatibility with the Wild and Scenic Rivers Act Section 7 determination process; (5) consistency with the River Protection Overlay; (6) consistency with management zoning; and (7) consistency with VERP shows the Preferred Alternative to be compatible or consistent with the evaluation criteria.